

# Gonococcal pharyngitis

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The causative organism of gonorrhoea, *Neisseria gonorrhoeae*, has a special predilection for columnar epithelium. It is a delicate organism easily destroyed by heat, drying, mild antiseptics, and soap solutions. Transference of infection occurs when moist infective discharges come into contact with susceptible mucous membranes.

Although the usual portal of entry of *N. gonorrhoeae* is the lower genito-urinary tract, the organism can enter at other sites, and infection may occur at any of the main orifices of the body. In males, infection of the rectum occurs in passive homosexuals. Nicol (1960) recorded 44 infections in the anal and four in both the anal and penile sites in 135 cases of gonorrhoea among homosexuals. Scott and Stone (1966) found rectal gonorrhoea in 36 of 82 male passive homosexual contacts of patients suffering from gonorrhoea.

Infection of the mouth and pharynx by the gonococcus appears to be very infrequent according to reports in the literature. Gonococcal stomatitis is a rare condition. Frazer and Menton (1931), in reporting such a case, stated that only about forty cases had been recorded previously, and only two cases have been reported since (Copping, 1954; Schmidt, Hjørtting-Hansen, and Philipsen, 1961). In neither of these cases, however, was there complete proof that *N. gonorrhoeae* was the causative organism. Diefenbach (1953) described a case of gonococcal parotitis in a male homosexual who had performed fellatio.

The first case of gonococcal pharyngitis was reported by Fiumara, Wise, and Many (1967). The pharynx was diffusely dark red and oedematous. A smear from the throat showed Gram-negative intracellular diplococci, confirmed by culture on Thayer Martin V.C.N. medium and sugar fermentation tests as *N. gonorrhoeae*. Eight of the patient's nine contacts were seen. Two of them had pharyngitis. Throat smears from both showed Gram-negative intracellular diplococci and throat cultures on Thayer Martin V.C.N. medium grew oxidase positive colonies, but there was no growth on sugars.

Thatcher, McCraney, Kellogg, and Whaley (1969) recorded another case which was asymptomatic. They examined 505 asymptomatic military personnel. No neisseria were recovered from urethral or rectal cultures, but 74 patients had *N. meningitidis* and one *N. gonorrhoeae* in the pharynx.

Metzger (1970) reported a case of gonococcal arthritis complicating primary gonococcal pharyngitis. This patient had acute inflammation of the pharynx, arthritis of the left wrist, and later arthritis of the right temporo-mandibular joint. Fluid from the latter joint, blood, and a throat swab all grew *N. gonorrhoeae* on culture.

A case of gonococcal tonsillitis was recorded by Iqbal (1971). The patient complained of a sore throat after oro-genital contact with his girl friend. The right tonsil and surrounding area were inflamed. A smear from the region showed Gram-negative intracellular diplococci, but the culture was negative. A diagnosis of cervical gonorrhoea in the contact was established by smear, culture, and fermentation tests. Bro-Jørgensen and Jensen (1971) grew *N. gonorrhoeae* from tonsillar swabs of six men and six women out of 161 (95 men and 66 women) consecutive Danish patients and from one of 49 foreign men. All 210 patients had urogenital or rectal gonorrhoea. Ten of these thirteen patients showed no clinical evidence of the disease in the pharynx.

The present report describes three cases of infection of the pharynx by *N. gonorrhoeae* in homosexual males seen in 1971 in one clinic, where the total number of cases of gonorrhoea among males recorded in the year was 119, of which 23 were homosexually acquired. Thus gonococcal infection of the pharynx is commoner than has hitherto been supposed.

## Case reports

**Case 1, a 29-year-old single Caucasian male,** attended the clinic on February 5, 1971, complaining of soreness of the foreskin of 3 to 4 days' duration. There was no history of past venereal disease. He admitted repeated sexual exposures with a male friend and also several casual homosexual exposures. Intercourse had always been oro-genital.

### Examination

There was a very mild balano-posthitis. There was no urethral discharge and the urine was clear in both glasses. No evidence of early syphilis was found. The pharynx and soft palate were diffusely inflamed. There was no adenitis.

A throat swab on Thayer Martin selective medium grew oxidase-positive colonies confirmed as *N. gonorrhoeae* by sugar fermentation tests. The Venereal Diseases Research Laboratory (VDRL), the cardiolipin Wassermann reaction (CWR), and the Reiter protein complement-fixation (RPCF) tests were negative.

### Treatment

The patient was treated with Probenecid 1 g. orally and procaine penicillin 1.2 mega units intramuscularly at his next visit on February 12; 4 days later the pharynx was still congested but the throat swab grew no gonococci. He was given oxytetracycline 500 mg. four times a day for 7 days.

### Result

Subsequent follow-up examinations were satisfactory and cultures from the throat were negative on March 2, April 16, and May 14. Serological tests for syphilis done on March 2, May 14, and July 1 were also negative.

**Case 2, a 29-year-old single Brazilian male**, attended the clinic on February 16, 1971, as a contact of Case 1. His only complaint was a feeling of tiredness of 2 weeks' duration. He denied a past history of venereal disease. His last exposure had occurred 5 days previously with Case 1, but he also admitted exposures with several other casual male partners. The contact had been mainly orogenital, mutual masturbation also taking place at times.

### Examination

There was a very scanty mucoid urethral discharge. There was no evidence of early syphilis. The pharynx looked normal. A smear of the urethral discharge showed less than 5 polymorphs per field and no Gram-negative intracellular diplococci. The urethral culture was negative, but the throat swab grew oxidase-positive colonies confirmed as *N. gonorrhoeae* by sugar fermentation tests.

The serological tests for syphilis were found to be positive—VDRL + (4), CWR +, RPCF +. A further specimen was sent to the Venereal Diseases Reference Laboratory and reported on as follows: VDRL + (2), CWR +, RPCF +, FTA-ABS +. Further clinical examination did not reveal any evidence of late syphilis, either acquired or congenital.

### Treatment

The patient was treated with probenecid 1 g. orally and procaine penicillin 1.2 mega units intramuscularly. A course of procaine penicillin 600,000 units intramuscularly for 15 days was also given. Spinal fluid examination was omitted because of the strong possibility of default.

### Result

The patient remained asymptomatic and follow-up test results were as follows:

19.3.71	} Throat swabs grew no gonococci.
16.4.71	
11.5.71	
11.5.71	Blood—VDRL + (2), CWR +, RPCF +.
5.8.71	Blood—VDRL + (neat), CWR +, RPCF +.

**Case 3, a 32-year-old single Caucasian male**, attended the clinic on November 26, 1971, because his male friend was being treated for gonorrhoea at another clinic. The patient had no complaint. He had been treated for gonococcal urethritis at another clinic 4 years ago. His most recent exposures were 3 weeks previously with his friend and 4 weeks previously with a casual male. The patient was passive on both occasions and admitted to having also had oro-genital contact.

The pharynx appeared to be normal.

### Examination

There was intra-meatal hypospadias, but no urethral discharge. The pharynx looked normal. Proctoscopy revealed some muco-pus containing Gram-negative intracellular diplococci. A urethral 'scrape' showed only an excess of pus cells. Cultures of specimens from the pharynx and the rectum, but not from the urethra, grew oxidase-positive colonies confirmed as *N. gonorrhoeae* by sugar fermentation tests.

There were no signs of syphilis, and the serological tests for syphilis were negative.

In view of the rectal infection the patient was treated with probenecid 2 g. orally and procaine penicillin 2.4 mega units intramuscularly. He defaulted after treatment, but attended on December 9 in response to a letter from the clinic. Rectal smear and culture showed no evidence of infection, but a throat swab was not taken at this visit. He defaulted again, and did not respond to a further letter from the clinic until February 2, 1972, when he attended again with nonspecific urethritis. Urethral, pharyngeal, and rectal cultures grew no gonococci on this occasion.

### Discussion

Diagnosis of gonococcal infection of the pharynx cannot be made by examination of Gram-stained smears alone because other *Neisseria* are commoner inhabitants of the area than the gonococcus. Positive cultures confirmed by sugar fermentation tests are essential to establish such a diagnosis.

Earlier authors have been impressed by the rarity of the condition. Frazer and Menton (1931) suggested that the reaction of the saliva and the nature of the buccal mucosa may in some way inhibit the transference of gonococci. Most of the oropharynx is lined by stratified squamous epithelium, but stratified columnar epithelium is found in some areas (Ham, 1969). Primary infection with the gonococcus probably occurs in these areas only, the rest of the oropharynx being involved subsequently. Zilz

(1911) thought that the alcohol usually imbibed before exposure to infection acted as a prophylactic and prevented the transference of infection. In support of this suggestion he described a case of gonorrhoeal stomatitis in a waitress who regularly had oral sexual intercourse because she was afraid of contracting venereal disease. She rinsed her mouth prophylactically in diluted brandy after each exposure, but had failed to do so on the occasion that the infection developed.

Attempts to culture *N. gonorrhoeae* from the throat are very rarely made on patients presenting with pharyngitis; recent experience suggests that infections due to this organism may thus be missed. Perhaps, if cultures are performed on all patients in whom such infection can be reasonably suspected, a higher incidence of the condition will be found.

The first patient reported here was investigated because he had an inflamed pharynx and admitted to oro-genital contact. The second was asymptomatic but admitted oro-genital contact with others in the same homosexual group as the first. Neither showed evidence of a gonococcal infection of the urethra. The third patient had a gonococcal proctitis but no clinical evidence of involvement of the pharynx. He, too, admitted oro-genital contact. Cultures of material from the pharynx were done in the three patients because all of them admitted having had oro-genital contact.

Gonococcal infection of the pharynx, even when symptomatic, may be missed because the possibility of a gonococcal aetiology is not considered. Cases of gonococcal pharyngitis may thus form part of the reservoir of infection in the community and attempts to detect and treat such cases early would help to lower the general incidence of the disease. As yet, however, the problem in the United Kingdom is numerically small.

In view of the systemic complications that can follow gonococcal infection of the pharynx and because the condition can be asymptomatic, it seems necessary now to include the pharynx as a site from which specimens for culture should be taken in all patients admitting oro-genital contact; it is usually possible to elicit such a history if the patient is questioned tactfully.

### Summary

A review of the literature shows that gonococcal infections of the pharynx, once very rare, are now being detected more frequently.

Three cases are reported here. They were seen in 1971 in a part-time venereal diseases clinic, where

the total number of cases of gonorrhoea among males for the year was 119, of which 23 were in homosexuals. One case was symptomatic, but the other two patients had no symptoms or signs referable to the pharynx. Throat swabs were cultured for *Neisseria gonorrhoeae* because the patients admitted having had oro-genital contact.

It would now appear necessary to include the pharynx as a site from which specimens for culture for *N. gonorrhoeae* should be taken in all homosexuals as well as in heterosexuals admitting oro-genital contact.

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### Pharyngite gonococcique

#### SOMMAIRE

Une revue de la littérature montre que les atteintes gonococciques du pharynx, autrefois très rares, sont découvertes plus fréquemment maintenant.

On en rapporte trois cas. Ceux-ci furent observés en 1971 dans une clinique consacrée partiellement aux maladies vénériennes où le nombre total des cas de gonococcie masculine avait été de 119 pour l'année, parmi lesquels 23 chez des homosexuels. Un cas présentait des symptômes mais les deux autres n'avaient ni signes ni symptômes concernant le pharynx. C'est parce que ces malades déclarèrent avoir eu un contact oro-génital que des prélèvements de gorge furent mis en culture pour *Neisseria gonorrhoeae*.

Il semblerait donc maintenant nécessaire de faire figurer le pharynx comme un des lieux de prélèvement pour la culture de *N. gonorrhoeae* chez tous les homosexuels, aussi bien que chez les hétérosexuels admettant avoir eu un contact oro-génital.